

ASSESSING A PUMPKIN BUTTER ENTERPRISE FOR  
BISHOP'S PUMPKIN FARM

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By  
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## ABSTRACT

Bishop's Pumpkin Farm is a 40-year-old agriculture tourism destination looking to expand their brand name. One way to do this is through value-added products and in the case of this study, by producing pumpkin butter. To determine if this would be a revenue enhancing enterprise for the business, expenses were analyzed for the ingredients in the product and the processing at an offsite processor. A break-even analysis was performed to determine a minimum price required to cover variable production prices and a minimum required price to cover total costs which would include establishment costs. The numbers were based on a minimum batch production, which would make 1,320 jars of pumpkin butter.

The study suggests that the pumpkin butter be sold at a lower price to help establish brand recognition and a customer base. A market study needs to be completed, in addition to this analysis, in order to determine the demographic and potential mark-up percentage for retail at high-end grocery stores. The minimum batch would give a small inventory base that would allow for a market analysis of the first year of the enterprise. From there, the business would be able to better determine future inventory requirements and a reasonable retail sales price.

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## Chapter 1

### INTRODUCTION

Bishop's Pumpkin Farm in Wheatland, California is a family run operation on the north side of the Sacramento Valley that opened in 1973. The farm currently consists of 45 acres of attractions, buildings, and parking lots, and another 74 acres of leased land dedicated to farming pumpkins. Open for six weeks during the fall season, the farm has over 100,000 visitors each year, and that number continues to grow.

When visiting the farm, customers have options of pumpkin field hayrides, a 4-acre corn maze, homemade food and baked goods, train rides, and three gift shops. The Bishop family began the farm in hopes of providing school children an opportunity to get into the country and learn about agriculture. The growth of the farm can be attributed to word of mouth recommendations, from repeat customers.

Recently the family has looked into increasing the local foods being offered at the farm. One of the farm's gift shops, The Cider Mill, offers a variety of local foods on display for sampling and purchase. This is where a potential new enterprise, pumpkin butter, will be sold. The pumpkin butter will be made by a contracted offsite processor with the recipe and cooked pumpkin provided by Bishop's Pumpkin Farm. In addition to selling the product on location, the family's future goal is to get the product into high-end grocery stores in the surrounding areas during the fall months, September through December. The u-pick fresh market is currently the only place Bishop's Pumpkin Farm's pumpkins are sold. With the introduction of pumpkin butter, the family hopes to expand the Bishop's Pumpkin Farm brand name, and broader their

retail products. Revenue from this new enterprise will support the development of other products to establish a Bishop's Pumpkin Farm product list including: apple cider syrup, apple butter and caramel.

Bishop's Pumpkin Farm has an opportunity to produce value-added farm products. To help the company branch out to the retailing industry, producing pumpkin butter will give the company a new niche product to expand their current market penetration. Value-added products allow small farms to increase market awareness, enhance credibility, and establish greater demand across all product lines. The United States Department of Agriculture categorizing Bishop's Pumpkin Farm as a commercial family farm with gross sales greater than \$500,000 (Cooperative Extension System, 2012). Producing a value-added product will increase these sales and assist the company in expanding local market penetration.

### Problem Statement

Bishop's Pumpkin Farm wants to increase market penetration and create a locally grown food product. Will retailing pumpkin butter produced offsite using Bishop's Pumpkin Farm recipe and pumpkins be a net revenue enhancing enterprise?

### Hypothesis

Using fresh pumpkins farmed at Bishop's Pumpkin Farm and supplied to an off-site processor in the production of pumpkin butter will be a profitable enterprise for the business.

To prove to be a profitable enterprise, the pumpkin butter must have a 45% gross profit margin for retail at Bishop's Pumpkin Farm.

### Objectives

Given the clarified problem statement, the objectives of the study are:

- 1) To determine the costs related to growing the Winter Luxury pumpkins.
- 2) To determine breakeven prices and quantity needed to return profit on the enterprise.
- 3) To determine the best offsite processor given fixed and variable costs for the production of pumpkin butter.
- 4) To establish expected profit return on pumpkin butter sales given the above costs.

### Justification

According to the USDA in 2011, only 5,800 acres of pumpkins were farmed in California compared to the 6,200 acres farmed the year before. California is the second highest producing state in pumpkin production with 168.2 million pounds grown in 2011, only behind Illinois who produced 520.4 million pounds. Although Illinois was number one, only 29% of the pumpkins are being sold in the fresh market, while a recorded 100% of pumpkins in California are being sold in the fresh market (United States Department of Agriculture, 2012)

Bishop's Pumpkin Farm currently farms 74 acres of pumpkins, the majority of which are grown in u-pick fields for customers during the six-week fall season. A small portion of the fields are dedicated to a Winter Luxury pumpkin variety that is used in the farm's bakeshop to make an assortment of homemade pumpkin baked goods. The farm has pumpkin processing equipment to process and cook all of the pumpkins used in these goods, which are also made from scratch and based on Bishop family recipes.

During the six-week period, the farm offers a unique experience to over 100,000 visitors. Given feedback from customers on websites such as Trip Advisor, Yelp, and Facebook, demand for pumpkin products in local food retailers would be well received. In order to expand the brand name, and reach into a larger population of customers, the Bishop's hope that producing a farm-grown product available to purchase at locations other than the farm, will be just what the customers are looking for.

The pumpkin farm is part of the agriculture tourism (agritourism) sector of agriculture which is a growing portion of the very diverse agriculture industry. Many agritourism based farms are involved in the North American Farmers Direct Marketing Association (NAFDMA). Members have connected with a common purpose to help all agritourism farms gain recognition in the United States. The information gathered about producing and selling a farm-grown product can be shared with members of NAFDMA and could possibly open up seasonal retailing opportunities for them. Additional, pumpkin butter has the potential to extend the fall season beyond the six weeks the farm is currently open.



## Chapter 2

### REVIEW OF LITERATURE

When determining whether a new enterprise would be beneficial to an established business many questions need to be answered. These questions may include: What product or service can the company provide in addition to what they already do? What are the costs and benefits associated with starting this new enterprise? What marketing strategies need to be used in order to make the enterprise successful? What are the established knowledge and resources available for the product or service? These types of questions act as a guide to a company when performing an analysis on adding a product to the business.

Currently, Bishop's Pumpkin Farm sells a "private labeled" pumpkin butter. This means that the farm purchases the pumpkin butter from an outside company who uses their own recipes and ingredients when producing the product, then a Bishop's Pumpkin Farm label is put on it and sold at the farm.

The Bishops are interested in creating a product using a family recipe made from heirloom pumpkins that are grown on the farm. Bishop's Pumpkin Farm receives many requests to retail off-the-farm baked goods and apple cider. The company is looking to produce a product that has a longer shelf life and reduces distribution challenges related to selling and transporting perishable goods. The following topics are addressed in relation to Bishop's Pumpkin Farm's interest in this type of product: including the current production of pumpkins in the United States, how local foods in retail perform, how to evaluate a new farm enterprise, the idea behind value-added agriculture, and the appropriate sales strategy to aide in the success of the enterprise.

### Pumpkin Production

All of the counties in the state of California grow pumpkins with San Joaquin and Sutter counties being the top producers. The pumpkins in California are used for Halloween or ornamental purposes (Gaskell and Smith 1997). There is a minimal, non-reported, amount used for processing in small business, similar to what Bishop's Pumpkin Farm currently does.

The variety of pumpkin used for processing is an heirloom variety, which in Bishop's Pumpkin Farm's case is called Winter Luxury. Heirloom pumpkins typically have a higher dry-matter which allows them to cook more evenly, in addition to having a sweeter taste (Gaskell and Smith 1997). A study done in Maine examined seven heirloom or "pie" type pumpkins and compared their cooking performance. The Winter Luxury rated poorly in appearance which is lacking orange color and has minimal ribbing. When examining the cooked interior however, the Winter Luxury was the most favorable due to its darker flesh color (Handley, Hutton and Koller, 2009). An advantage of this variety is its small size which allows for easier cooking on a small scale and in smaller cookers.

### Local Foods in Retail

Amy Guptill and Jennifer Wilkins researched the changes in the food retail systems. They specified two trends in the food system: one is a concentrated food retail sector with little to no geographical boundaries, while the other trend is the direct sales of food to consumers. The direct sale of products incorporates farmers markets, Community Supported Agriculture, and farm-stands which have recently seen exceptional growth. These opposing trends have raised questions regarding how they affect the retailing of the product, along with how to market and promote the products and how the trends can influence local products.

The Guptill/Wilkins study conducted interviews with local grocers in a concentrated location. The interviewees agreed that selling local foods was beneficial to the customers and the grocery stores; however, many barriers existed. These barriers were marketing professionalism, the ability of the producer to provide a consistent high-quality good, the product being in retail friendly packaging, and the pricing of the local foods. Regardless of these barriers, the grocers knew of the importance of retailing local foods for both their business and their customers. The upcoming trend of buying local can strongly affect a consumer's preferences in a product. This trend stems from consumers concerns of food safety, genetically modified foods (GMO's), and the overall health of their local economy (Guptill and Wilkins, 2001).

The idea of buying locally has boosted local food sales up \$1 billion from 2002 to 2007. The percentage increase in local food has surpassed the growth percentage of organic foods making local foods the go to market for small farms given the times. This movement to local foods not only comes from consumers' concerns of what is on their table, but also the idea of fresher and more full flavored products. The local food movement has a backbone from the natural food movement of the 1960s. To the farmers of this movement, organic was not just a way of growing food but also a way of life. These farmers laid the ground work for current organic farmers and in turn for sustainable local farmers as well. When the natural food and organic growers turned to the major grocery stores for sales through the 1990s and 2000s the direct connection between the farmers and consumers began to decrease. Because consumers like the direct connection to the product and the ability to know exactly where their food was grown or produced is why the need for local foods has become so strong (Ikerd, 2009).

### Evaluating New Farm Enterprises

The factors that can assist in evaluating the success of the enterprise include: low establishment costs, a high gross-profit margin, high success rates with other enterprises the business has entered, high cash inflows relative to the required cash outflows, and a highly unique product with a high demand and low supply in the market currently. Goals are also an important factor in making an enterprise successful (Hinman, 2011). Some goals for a new enterprise may be reaching break-even numbers in the first year, or to have the ability to cover all establishment costs after the first year.

The profitability, resources, information, marketing, enthusiasm and risk (PRIMER) method is one used when evaluating a new enterprise for a company. The factors in this method allow for a business owner to determine whether a current enterprise is good, or to help make the decision on whether or not to add an enterprise. Farmers must ask the question “What can I produce to sustain or improve profits on my farm?” when evaluating enterprise possibilities. This method allows producers and farmers to determine what to produce that will answer that question (Woods and Isaacs, 2000).

### Value-Added Agriculture

The lack of impression that small farms have in the market place requires them to take an extra step with their product. Most of them find ways to penetrate the market through niche products. A “niche” product can be defined as a specialized product in a normal market. In niche marketing, a specific product is aimed at a limited segment of the mainstream market (Dalton, *et al.*, 2002). To produce these niche products, farmers are finding ways to add value to their

product, or take the product to the next level and make an unprofitable enterprise, profitable (Fleming, 2005).

In years past, the market consisted of face-to-face interactions and common region. Value-added agriculture has allowed producers to go back to this type of market. The products are more local based, allowing for a direct connection to consumers of a specific region, along with a specialized product made in that region (Rilla, 2003). Examples of value that can be added to an ordinary farm product include: processing, labeling or packaging, smoking or drying, culturing and handcrafting. Fleming (2005) found that value added to a product is limited only by imagination. Value-added products not only revert back to a market consumers used to know, but also have higher returns, bring recognition to a smaller farm, and extend the market season (Rilla, 2003).

There are two different types of strategies when it comes to addig value to a farm product. One strategy would be to fully process the product into something more. This strategy would be a type of capturing the value, and examples of this would be to begin a direct marketing plan or to process the products through an outside facility. Another strategy would be a created-value approach. In this approach a farmer may get an organic certification in order to give his product more credibility, or better the products brand image and have identification to a specific region. In the capturing value strategy, a producer may risk lower productions and competitive markets. However, in a created-value approach, the producer faces high production risks because of the need for increased knowledge in regulations and liability issues connected with the change to the product. Most producers balance a bit of both types of strategies in order to make the best improvements to the product (Born and Bachmann, 2006).

### Sales Strategies

In order to get the product into stores, different sales strategies need to be considered. Some options include: a broker, distributor, wholesaler, consignment, retailer or direct-to-consumer. In retailing, the sale is made directly to the consumer. Because of the smaller production quantities of Bishop's Pumpkin Farm pumpkin butter, a distributor or wholesaler will not be required. A contract between the producer and the retailer can be done. The other option for selling the new pumpkin butter is through direct-to-consumer. This type of sales can be accomplished through farmers' markets, the internet or through a catalog (Dalton, *et al.*, 2002).

One of the main benefits of direct sales is the ability to preserve small farms while contributing to the local economies. Consumers are also more curious as to how the product is made in today's society, and their ability to exercise their right to know what is in the kitchen cabinets. Today's consumers have an increased concern in food safety and welcome interaction with the producers themselves. Direct marketing also allows the producers to bring their product to the consumer, and aids in reducing the distance between the farms and the consumers (Gale, 1997).

Direct selling not only increases the relationship between the consumers and producers, but also greatly assists rural areas and their development. The biggest impact comes from direct cash flow because of the sales connection between the farmers and consumers. The direct sales model allows the producers to retain the value that has been added to their product because of the lower costs of transportation or marketing activities required by wholesalers or retailers. In other words, it allows the producer to retain more of the earned dollar. In addition, the prices received from direct sales products tend to be higher and adds an economic boost to the farmer. Agriculture tourism is yet another way to enhance a rural economy while promoting direct sales.

When people take a trip to a farm community, they may be inclined to also check out the local restaurants and stores. With this increase in foot traffic, a small population community may get an influx of cash inflow coming from an additional market they have not had access to before (Gale, 1997).

## Chapter 3

### METHODOLOGY

#### Procedures for Data Collection

The data needed to complete the analysis and budgets for this study will include: the cost of farming the pumpkins, the cost of processing the product, and the break-even price and quantity. With these numbers and analysis, the study will be able to determine whether producing pumpkin butter offsite and selling it on location and/or at high-end grocery stores will be a net revenue enhancing enterprise to Bishop's Pumpkin Farm.

For the cost associated to providing fresh pumpkins to the processor, the focus will be on the price of farming the pumpkin. The costs of farming would be based on the current acreage of the heirloom pumpkin variety farmed at Bishop's Pumpkin Farm and would include: seed, fertilizer, land costs, labor, and water. Cost of transporting the product to the processing plant will be added as a variable cost to the budget and be calculated based on the Internal Revenue Service's rate of business mileage. The cost of the additional ingredients required to make the pumpkin butter also need to be included. The ingredients that will be provided by the processing company include: sugar, pectin, lemon juice, cinnamon, nutmeg, ground ginger, and allspice.

Each processing plant possibility will provide quotes on a per unit basis. Once we know the cost of processing and canning the pumpkin butter, we will be able to add this variable cost per unit to the budget. The cost of labeling will also be a factor. Companies that work directly with the processing facilities will provide quotes on the different labeling options. Each form of pumpkin will have two possible total costs, one for each processing plant.



### Procedures for Data Analysis

The basic approach for the analysis of this study will be through a budget format. The information gathered during data collection will be inserted in an excel spreadsheet and the lowest overall cost per unit will be determined. After variable and fixed costs have been determined, a short run break-even price based on total variable costs and a long run break-even price based on total costs can be calculated. Break-even quantities in the short and long run will also be calculated. With the estimated costs and break-even price a profit can be estimated to determine if this enterprise will be beneficial to the company. A 45% mark-up on the break-even price multiplied by the break-even quantity will estimate the gross profit.

### Cost-Benefit Analysis

A cost-benefit analysis can be used to assess both long-term results and give a broad view of the costs and benefits associated with a project or enterprise. The first step to a cost-benefit analysis is to determine the factors that need to be considered in the enterprise, along with the question that needs to be answered about the enterprise. (Prest, Turvey 1965).

There are three general principles to a cost-benefit analysis which include: determining the cost and benefit values, the interest rates to be discounted if applicable, and what constraints are attached to the production of the product. When determining the benefits of an enterprise the importance is in the value of an increase of an output given a certain additional cost or input. An assumption will be made to set the price on necessary inputs and outputs and ignoring uncontrollable price changes affecting production. In addition, for benefits that have a market value, the market value plus any consumer surplus can be considered a measure of the gross benefit from the enterprise (Prest, Turvey 1965).

The second principle of a cost-benefit analysis is the valuation of the costs and benefits. All variables must be measured to the expected prices of future inputs. The main point being that all prices and costs are evaluated on the same level. The general price level does not need to be adjusted to expected changes (Prest, Turvey 1965).

The last principle analyzes the constraints of the enterprise, including: physical, legal, administrative, budgetary, and distributional. The main constraints that may affect the production of pumpkin butter would be budgetary and distributional. Distributional constraints pertain to the economically feasible choice needing to be made for inputs (Prest, Turvey 1965).

### Fixed and Variable Costs

A profitable product is one that has high enough revenues to cover both its fixed and variable costs. Fixed costs are those that are set costs not affected by the volume of output or by the amount of sales (Spence 1976). For the pumpkin butter enterprise, examples of fixed costs are the label plates to make the labels, initial marketing of the product, and state testing required for canned products. Variable costs change with the amount of output produced. Typically, variable costs increase at a steady rate in relation to the capital of the enterprise (Warren, Reeve and Duchac 2009). Variable costs associated with pumpkin butter include transportation and per unit processing costs. These costs will be factored into the comparison of processing plant choices.

## Budgets

A budget is a quantitative plan for current and upcoming projects for a business. The budget takes operations and identifies the resources required to reach financial targets. These resources could include monetary or objective aspects (Doost). In pumpkin butter, all of the costs and prices are monetary.

There are numerous types of budgets including: master, operating, purchase and production. This study's main focus will be on financial budgets that state the income and outflows required for the operation. Production budgets will also be considered for the inputs needed for the processing, and to clearly show each input and the difference in costs for each (Doost). When creating the enterprise budget for pumpkin butter, the structure will be income from total estimated sales of the pumpkin butter minus the expenses from producing a specified quantity of the pumpkin butter per unit which will give us an estimated profit.

During the process of creating a budget, employees and upper management should have equal contributions into the decisions of the budget itself. There must be a balance of budgetary slacks, where the amounts are excessive, and with a very tight budget, which may not be realistic (Doost).

## Breakeven Analysis

A breakeven analysis is one that determines the price required for retail of the product that will equal the costs of producing the product. In other words, the revenue must be equal to the total costs of production in order for an enterprise to breakeven. This comparison can be done using a quantitative analysis if numbers are available, if not a mental comparison can be estimated (Cafferky and Wentworth 2010). A breakeven analysis can be conducted two ways.

One way will allow for a breakeven sale price, while the other way will give a breakeven quantity to be sold.

$$\frac{\text{Fixed Costs}}{\text{Contribution Margin per Unit}} = \text{Breakeven in Units to be sold, BE}_e$$

The formula above calculates the number of units required to be sold in order to breakeven on the enterprise. Fixed costs are determined in the budgets, and the contribution margin per unit would be the cost to produce one more unit of the product.

$$\frac{\text{Fixed Costs}}{\text{Contribution Margin Ratio per Unit}} = \text{Breakeven in Dollars to be sold, BE}_\$$$

This formula calculates the price required for the product in order for the enterprise to breakeven. The fixed costs are again gathered in the budgets. The contribution margin ratio per unit is the number of units produced by adding one more input (Cafferky and Wentworth 2010).

After completing a breakeven analysis, the company would be able to determine the lowest sales price and production quantity required to breakeven. From there they can determine if the target profit margin is feasible. A profit margin is the ratio of a company's gross profits to its net sales, expressed as a percentage. The higher this percentage, the better off the company is (Warren, Reeve and Duchac 2009).

### Assumptions

This study assumes variable cost for the processing of one batch of pumpkin butter, which only produces 1,320 jars. This assumption is being made because this is the minimum

order and will allow for marketing research to be done that will indicate a demand for the product. In addition, the retail price used in calculating profits is with a 45% mark-up used on the breakeven price of the product, assuming customers are willing to pay this price for the product. To determine a 45% gross profit margin, establishment costs will not be factored in; only the cost of the goods will be subtracted from the total sales.

A factor that may influence the amount of sales for the pumpkin butter is the way we will be marketing the product. In the analysis of profits the study will assume no marketing factors. These assumptions may greatly affect the outcome of profits; however the focus of this study is on how much it costs to produce the pumpkin butter per unit specifically.

### Limitations

A limitation may be a minimum quantity requirement from the processor. The company is looking to do additional products in the future, depending on the ability to meet quantity requirements by the processor and the success of sales in grocery stores. If Bishop's Pumpkin Farm can't meet the processing company's quantity levels in order to receive a price break in per unit production, the company may be spending an unnecessary high amount per unit.

Another limitation may be the ability to produce enough heirloom pumpkins on the farm to use for the processing of pumpkin butter in addition to the current production of baked goods onsite. There is no guarantee from year to year that pumpkin production will remain the same which causes for the potential of un-uniformed cost of growing pumpkin each year.

## Chapter 4

### DEVELOPMENT OF THE STUDY

#### Data Collection Problems

After contacting several canning facilities in the Sacramento area it became apparent that the options are limited. Kozlowski Farms located in Forestville was a potential option, however the company would not allow for the pumpkin to be provided by a company other than themselves. Because of this the product would turn into a private labeled product instead of co-packing a Bishop's Pumpkin Farm and Kozlowski Farms, product. Additional companies that were contacted only did dry foods, or had similar regulations as the prior company. The final processing company, Mad Will's Food Company located in Auburn, California, was able to provide the service required to make the product. The company would be able to use the recipe and pumpkins provided by Bishop's Pumpkin Farm. Due to this, the study now will focus on the cost of producing the Pumpkin Butter through a partnership with Mad Will's Food Company.

#### Yield Data and Assumption

To analyze the cost of producing one batch of Pumpkin Butter, the cost of Mad Will's Food Company processing in addition the cost of farming and supplying the pumpkin must be considered (Table 1).

Table 1: Analyzed Packaging, Pumpkin Supply and Transportation Costs for Pumpkin Butter

<b>Cost Category</b>	<b>Cost Value</b>
<b>Start-Up</b>	
Marketing	\$ 1,000.00
Test Batch	\$ 400.00
Label Plate	\$ 220.00
Barcode	\$ 50.00
<b>Packaging</b>	
Processing/Bottling	\$ 2,576.20
pH Control Testing Fees	\$ 125.00
Labels	\$ 358.00
<b>Pumpkin Supply</b>	
Seed	\$ 110.00
Farming	\$ 515.00
Farm Labor	\$ 500.00
Processing Labor	\$ 675.00
<b>Transportation</b>	
Mileage	\$ 70.29
<b>Total Cost</b>	<b>\$ 6,599.49</b>

Source: Fougere, Derek. 2013. Product Developer, Mad Will's Food Company, Auburn (February 27)

To differentiate the costs and determine sunk and variable costs, the expense have been broken into four categories: start-up, packaging, pumpkin supply, and transportation. The start-up costs include a budgeted amount for marketing, a test batch, the label plates required to make the labels, and a fee associated to registering a barcode to the product.

The remaining categories are based on making one batch of pumpkin butter. A single batch supplies 110 cases, which is 1,320 jars. The processing of one batch, which includes the cost of an eight-ounce button top with black lid jar, is \$2576.20. The pH control testing is required for every product release and is a set fee of \$125. The labels will be printed from Best

Label Company in Union City, California and costs \$358. This expense includes one roll of labels with three colors on the design, and a gloss varnish finish.

To supply the pumpkin to Mad Will's Food Company the cost of seed, farming practices and labor must all be considered. Bishop's Pumpkin Farm will dedicate three-quarters of an acre to farming the Winter Luxury pumpkin. The farming cost will be estimated at \$515 and includes fertilizer, rent for the land, fuel for the farming equipment, and water. Labor for the farming is valued at \$20.00 per hour, and a projected 25 hours, for an estimate of \$500. The pumpkin processing labor is valued at \$15.00 per hour. A batch of pumpkin typically takes about three hours and one batch yields 30 pounds of pumpkin. The required supply of pumpkins for one batch of Pumpkin Butter will be 430 pounds, so 15 batches of pumpkin must be cooked. At \$15 an hour and 15 required batches that take three hours to cook, processing labor will be estimated at \$675. Transportation will be required to deliver the cooked pumpkin. The Internal Revenue Service, IRS, has set the standard mileage rate at \$0.56 which includes the standard fixed and variable costs of operating a vehicle. At this rate and the distance from Bishop's Pumpkin Farm to Mad Will's Food Company, mileage will cost just over \$70.

To determine a break-even price and quantity in the short run, the focus is on variable production costs that produces 1,320 jars. If the variable production costs are \$4,930, the break-even price will be \$3.73 a jar. As stated in the hypothesis, the goal gross margin is 45%, putting the sale price of this product at \$5.41. To break-even on the variable production costs, the numbers of sales must be at least 910 jars.

Table 1.2 Break-Even Price and Quantity in Short Run and Long Run

<b>Variable Production Costs</b>	\$ 4,929.49	<b>Total Costs</b>	\$ 6,599.49
Jars per batch	1320	Jars per batch	1320
<b>Break-Even Price</b>	\$3.73	<b>Break-Even Price</b>	\$ 5.00
Gross Margin Mark-Up	1.45	Gross Margin Mark-Up	1.45
Sales Price	\$5.41	Sales Price	\$ 7.25
<b>Break-Even Quantity</b>	910	<b>Break-Even Quantity</b>	910



In a long run analysis, the start-up costs and variable production costs are totaled to determine a break-even price and quantity. With total costs estimated at \$6,599 and 1,320 jars per batch, the break-even price is \$5. With a 45% gross margin mark-up, the sales price for the product in the long run is \$7.25. The break-even quantity for a long run analysis is also 910 jars.

Again, using the objective gross margin of 45%, expected profit returns can be calculated. Assuming total sales of the batch, the profit in the short run using only variable costs and the short run sale price of \$5.41, will be \$7,148. With the same assumptions the long-term gross profit, using total costs and sales, gross expected profits will be \$9,570. To determine the net profit for the first year assuming only variable costs, net profit will be the gross profit of \$7,148 minus the variable costs of \$4,930, producing a net profit of \$2,218. In the long run, the net profit will be the gross profit of \$9,570 minus the total costs of \$6,599 for a net profit of \$2,971.

### Analysis

When considering gross profit, the business will be able to return a profit on the pumpkin butter within the first year. The enterprise would be able to cover establishment costs in the first year if they charged a higher retail sales price. The business can sell the product at the farm in one a gift shop at this higher price due to the concentrated market, but this price may not be appropriate in offsite retail locations. In order to determine if a high mark-up on the product can be charged in the offsite retail locations, a thorough market study must be completed.

## Chapter 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The objective of this study was to determine if establishing a pumpkin butter product enterprise at Bishop's Pumpkin Farm would be a net revenue enhancing addition. The variable and fixed (sunk) costs were determined for growing the Winter Luxury variety of pumpkin to be used in the product and for the processing of the product at an offsite processor. With the determined expenses, calculations for the break-even price and quantity were completed for a short and long run term. Net profits for these two terms were also estimated. Profits were estimated on a sales price based from a 45% gross mark-up and calculated with consideration of recovering establishment expenses in the first year or putting off recovery of these expenses until the second or third year of the enterprise.

#### Conclusions

Analysis showed that total variable costs would add up to just under \$5,000 and total costs at \$6,600. The total costs include expenses that the business would assume as establishment or sunk costs in the beginning years of the enterprise. The expenses of establishment of the product include: label plates, batch testing, barcode registration for the label, and initial marketing. If you assume these types of costs during the second, third or even fourth year of the enterprise, net profits for year one would be less than if you considered total expenses. However,

the price required to make a higher profit given total costs is seemingly unreasonable before market studies are completed.

To explain the profits for the enterprise, prices for short and long run were calculated. In the short run the price is about \$3.00 and allows for the 45% mark-up to calculate at a fair price of \$5.40 for retail. The long run price sits at about \$5.00 and with the 45% mark-up making a more expensive product at \$7.25. As mentioned above, the latter price would allow for a higher net profit. Though a high net profit is beneficial, it may be unrealistic when first establishing a product. Thus, it would be recommended to begin the product sales at the short run price to allow for the product to establish brand recognition. Once this groundwork has been laid, the consideration of marking up the product can occur with some additional market and demographic research.

### Recommendations

With the expenses, prices and profits constructed by this study, establishment of a pumpkin butter product enterprise for Bishop's Pumpkin Farm will be a revenue enhancing addition. Additional requirements to start up the enterprise include paperwork verification for the growing and processing of the pumpkins at Bishop's Pumpkin Farm facilities and a nutritional analysis of the product to be listed on the label as required by state law. A marketing plan needs to be completed to determine the correct market price for the given demographic.

It would be recommended to increase the product line to include apple butter, apple cider syrup, caramel etc. This product line could become successful if it can be integrated into high-end grocery stores and through online sales. Bishop's Pumpkin Farm has received requests from past customers who have moved away from the area and still would like the ability to purchase

Bishop's Pumpkin Farm products. With this initial interest, a thorough survey to further determine the opportunity of online sales would be beneficial for the product line.

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